

REMARKS

This paper is filed in response to the Office Action mailed November 19, 2008. Claims 1–5 and 7–20 were pending and were rejected. No claims are amended herein; therefore, Claims 1–5 and 7–20 remain pending. Additionally, the Examiner objected to the drawings. The specification, including the drawings have been amended to overcome this objection as set forth below.

Objection to the Drawings

The Examiner objected to the drawings as filed for not showing certain features of the claims, namely, a flowchart corresponding to the claimed encoding method, a depiction of the claimed slice groups, and a depiction of the claimed map. New FIG. 4 is presented, which is a flow chart of the claimed encoding method. Appropriate reference numerals have been added at various points in the specification where the method steps depicted in the flow chart are described. Also, new FIGS 5A and 5B are presented, which schematically depict video frames including macroblocks and slice groups. Again, reference numerals identifying the various components have been added throughout the specification where they are described. Finally, new FIGS 6A and 6B are presented, which schematically depict an intra macroblock map as described in the specification. Again, references to the figures have been added at appropriate locations in the specification. No new matter is introduced by these amendments. Reconsideration and withdrawal of the objection to the drawings is requested.

Rejections Under 35 U.S.C. § 101

The Examiner rejected claims 1–5 and 11–20 as directed to non-statutory subject matter, stating that “the present claims neither transform underlying subject matter nor positively tie to another statutory category that accomplishes the claimed method steps, and therefore do not qualify as a statutory process.” This rejection is not well-founded. Each of the rejected claims is directed to the manipulation of *video* signals and/or data, which are visual depictions of physical and tangible objects. The Federal Circuit has made clear that electronic transformations of data to/from a visual depiction are sufficient, and that it is not necessary for a claim to require transformation of the underlying physical object represented by the data. *In re Bilski*, 545 F.3d 943, 963 (Fed. Cir. 2008). *See also Ex Parte Halligan*, Slip Op. at 25 (BAPI 2008). In view of

this controlling legal authority, reconsideration and withdrawal of the rejections of claims 1–5 and 11–20 under § 101 are requested.

Prior Art Rejections

Claims 1–5

The Examiner rejected claims 1–5 as obvious over U.S. Patent 5,260,783 to Dixit (“Dixit”) in view of U.S. Pre-grant Publication 2003/0227972 to Fukuda (“Fukuda”). Dixit teaches a video encoding technique in which a strip of blocks can be intra coded while the remainder of the frame is inter coded. Fukuda teaches an intra refresh mechanism where certain blocks are prioritized for more frequent refreshing based on their perceptual importance. Examiner contends that the strip of blocks disclosed in Dixit meets the limitations of independent claims 1 and 3 requiring that blocks to be intra refreshed be assigned to a particular slice group. However, Dixit contains no teaching or suggestion of the required slice group. A slice is not merely an arbitrary collection of blocks, but rather a particular processing unit in certain video encoding standards. As such, Dixit fails to teach or suggest assigning macroblocks to be intra refreshed to a first slice group and assigning remaining macroblocks to one or more other slice groups, which is required by each of independent claims 1 and 3. Fukuda does not supply this missing limitation. Therefore the rejection of claims 1–5 as obvious over Dixit in view of Fukuda is improper.

Moreover, Examiner concedes that Dixit does not teach or suggest the required “map indicating what macroblocks were assigned to the first slice group ... specifying the slice group to which each coded macroblock belongs.” Examiner then relies on the qualitative refresh period map shown in Fig. 5 of Fukuda to meet this limitation. However, the cited qualitative refresh period map does not indicate what slice groups blocks belongs, but rather indicates the time until a particular block will be refreshed. Therefore, neither Dixit nor Fukuda disclose, teach, or suggest the required “map indicating what macroblocks were assigned to the first slice group ... specifying the slice group to which each coded macroblock belongs.” This provides further, separate reason why the rejection of claims 1–5 as obvious over Dixit in view of Fukuda is improper.

In responding to Applicants’ argument concerning the distinction between Dixit’s column of pixels to be refreshed and assignment of pixels to slice groups for refreshing, Examiner notes that Dixit teaches that “randomly selected blocks” can be selected for intra refresh. However,

Dixit teaches no mechanism other than a field identifying the vertical strip for specifying which blocks are to be intra refreshed. In fact, Dixit teaches that “[v]ertical-strip-location subfield 418 typically contains 0, 4, or 5 bits which identify the block column location of the vertical strip portion 102 (FIG. 5) of intra-frame coded data for a composite intra/inter-frame coded video frame.” Dixit at col. 11, ll. 63–67. Applicants have not identified any other teaching in Dixit specifying how blocks to be intra refreshed are identified, and a short bit sequence identifying a particular column is certainly not the map recited in the present claims. While it may be true that the use of a map as recited in the present claims would find use in the coding technique taught by Dixit, there is certainly no teaching or suggestion of such a map in Dixit (or any other cited reference), and the application of such a map to Dixit by Examiner seems to be based purely on impermissible hindsight.

Based on the cited references’ failure to teach or suggest assigning macroblocks to be intra refreshed to a particular slice group or a map specifying which slice group each macroblock is assigned to, it is clear that the rejection of claims 1–5 as obvious over these references is improper. Reconsideration and withdrawal of the rejection of claims 1–5 as obvious over Dixit in view of Fukuda is therefore requested.

Claims 11–13 and 16–19

The Examiner rejected claims 11–13 and 16–19 as obvious over U.S. Patent 6,333,948 to Kurobe et al. (“Kurobe”) in view of Dixit and Fukuda. This rejection suffers the same fundamental flaw as that discussed above with respect to claims 1–5. Specifically, each of claims 11–13 and 16–19 recites assigning macroblocks to be intra refreshed to a first slice group, assigning the remaining macroblocks to one or more other slice groups, and generating a map specifying which slice group each macroblock belongs to. Kurobe, like Dixit and Fukuda, lacks any teaching or suggestion of assigning blocks to be refreshed to a particular slice group while assigning other blocks to other slice groups. In fact, Kurobe (like Dixit and Fukuda) fails to even use the word “slice,” much less describe the particular method steps recited in Applicants claims. As noted above, “slice” is not merely an arbitrary term for a group of blocks selected by Applicants, but rather is a specific term of art describing a particular processing unit in certain video encoding standards. Because, Kurobe (like Dixit and Fukuda) does not teach or suggest the concept of slices, it cannot teach the required steps of assigning blocks to be intra refreshed

to one slice while assigning other blocks to other slice groups, nor can it teach the required step of generating a map specifying which blocks belong to which slice groups.

Therefore, the rejection of claims 11–13 and 16–19 as obvious over Kurobe in view of Dixit and Fukuda is improper. Reconsideration and withdrawal of this rejection is therefore requested.

Claims 7–10

The Examiner rejected claims 7–10 as obvious over Dixit in view of Fukuda and Kurobe. Like each of the claims addressed above, claims 7–10 recite the assignment of macroblocks to be intra refreshed to a first slice group, the assignment of remaining macroblocks to one or more other slice groups, and the generation of a map specifying which blocks are assigned to which slices. Rearranging the order of the references does not change their teaching, and thus Dixit, Fukuda, and Kurobe fail to teach or suggest at least the referenced limitations. Therefore, the rejection of claims 7–10 is improper, and reconsideration and withdrawal of this rejection are requested.

Dependent Claims

Each of the claims not specifically addressed depends from one of the claims addressed above, and are therefore patentable for at least the same reasons. Therefore, the rejections of these claims are also improper, and withdrawal of such rejections is requested

Conclusion

In view of the foregoing amendments and remarks, it is respectfully submitted that each of the pending claims is in condition for allowance. Withdrawal of all outstanding objections and rejections and a Notice of Allowance for all pending claims are therefore requested.

Respectfully submitted,

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Date

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